

REMARKS

Regarding the status of the present application, Claims 1, 7, 8, 11, 17, 18, 19 and 21 have been amended, and Claims 1-21 are pending in this application. Reconsideration of this application is respectfully requested. A petition and fee for a one month extension of time is enclosed.

The paragraph starting at page 7, line 31 has been amended to delete an unnecessary comma at the end of the first sentence. Entry of the specification amendment is respectfully requested.

A typographical error relating to the word "POTENTIAL" in Fig. 4c has been corrected by a drawing amendment. Enclosed is a marked-up drawing having the proposed amendment marked in red ink. Also enclosed is a replacement reproducing master containing the correction. Entry of the drawing amendment and replacement reproducing master is respectfully requested.

Claims 7, 8, 17 and 18 were objected to because of informalities noted by the Examiner. Claims 7 and 8 have been amended to depend from Claim 6 and Claims 17 and 18 have been amended to depend from Claim 16, and are believed to be in proper form. In view of these claim amendments, withdrawal of the Examiner's objection is respectfully requested.

Claim 19 was objected to because of an informality noted by the Examiner. Claim 19 has been amended to address this issue and replace "it" with "the transparent displayed image." In view of this amendment, withdrawal of the Examiner's objection is respectfully requested.

Claims 1-5, 9, 11-15, and 19-21 were rejected under 35 U.S.C. § 102(e) as being anticipated by US Patent No. 6,657,667 issued to Anderson. It is respectfully submitted that the Examiner's position is in error. Claims 1, 11 and 21 have been amended to more clearly distinguish over the Anderson patent.

In summary, the present invention provides for digital cameras and methods that help a user accurately align sequential photographs to create optimal panoramas and composite photographs that produce a large photograph derived from a sequence of smaller photographs. In particular, an algorithm running on the camera guides a user through the image-taking procedure, allowing him or her to select if a panoramic or composite photograph is to be taken, and optionally the number of images (width and height) needed to create the final image. The algorithm displays indicia that are overlaid and moved over a live image during the image-taking process to help align the subsequent image to be taken with the previously recorded image. Alternatively, a transparent image is moved in an appropriate direction across the display to the location of the subsequent photograph that is to be taken, which is used to align and place the subsequent photograph relative to the preceding photograph. Thus, in the present invention, the displayed overlaid indicia is moved relative to the live image to align the two images.

The Examiner's position is that the Anderson patent discloses

"a processing algorithm that runs on the processing circuitry (col. 4, lines 4-15) that: provides a user interface (408; col. 5, lines 53-67) for selecting if a composite photograph is to be taken (col. 6, lines 53-61) and for identifying a location of a first photograph to be taken (col. 7, lines 7-35; figs. 7A and 8);

after the first photograph has been taken, overlays indicia on the display indicating an overlapping area within a second photograph that is to be taken (col. 7, lines 31-42; fig. 9); and moves the overlaid indicia along with the image displayed on the display as the camera is moved to a position to take the second photograph, which overlaid indicia is used to align and place the second photograph relative to the first photograph (col. 7, lines 31-42; fig. 9)."

It is respectfully submitted that the Examiner's assertion is incorrect.

The Anderson patent discloses at column 9, lines 15-23, that

"Referring again to FIG. 7B, after displaying the live image in the live view zone in step 588, the user establishes horizontal and vertical alignment between the live image in the live view zone with the overlapping still images in the other zones in step 590 by altering the position of the camera. After aligning the live image with the still image in step 590, the user captures the image for the current pane in the composite image array in step 560 (FIG. 7A) and the process continues."

Thus, it is clear that the live image is moved in the live view zone relative to the previously recorded still image(s) displayed in the other zones. Thus, the live image is moved over the previously recorded still image(s) in order to align the images. This is not what is recited in Claim 1. In contrast to the express teachings of the Anderson patent, the present invention moves the overlaid indicia over the image displayed on the display as the camera is moved to a position to take the second photograph.

Furthermore, the present invention may use indicia 56, such as guidelines or marks, for example, to assist a user in moving and aligning a second photograph to a previously taken first photograph. The Anderson patent discloses that the live image is moved relative to the previously recorded still image to align them, and not other indicia are employed. It is also respectfully submitted that the Anderson patent does not contain the terms "indicia" or "mark," or any similar term.

Therefore, it is respectfully submitted that the Anderson patent does not disclose or suggest, and certainly not without distorting its express teachings and using improper hindsight reconstruction, a digital camera system comprising a processing algorithm that "after the first photograph has been taken, overlays indicia on the display indicating an overlapping area within a second photograph that is to be taken" and "moves the overlaid indicia over the image displayed on the display as the camera is moved to a position to take the second photograph, which overlaid indicia is used to align and place the second photograph relative to the first photograph." [Emphasis added] The Anderson patent does not disclose or suggest anything regarding displaying and moving indicia over the subsequent image in order to align it.

In accordance with the express teachings of the Anderson patent, the user aligns the live (second) still image to the previous (first) image displayed in the image pane. This is alls

clearly indicted by the above-quoted discussion relating to reference numeral 590 shown in Fig. 7B.

In view of the above, it is respectfully submitted that Claim 1 is not anticipated by, nor is it obvious in view of, the Anderson patent, and certainly not without distorting the express teachings of the Anderson patent and using improper hindsight reconstruction. Withdrawal of the Examiner's rejection of Claim 1 is respectfully requested.

Dependent Claims 2-5 and 9 are considered patentable over the Anderson patent at least based upon their dependence from allowable Claim 1. Withdrawal of the Examiner's rejection of Claims 2-5 and 9 and allowance thereof are respectfully requested.

With regard to independent Claim 11, it is respectfully submitted that the Anderson patent does not disclose or suggest, and not without distorting its express teachings and using improper hindsight reconstruction, a method that "after the first photograph has been taken, overlaying indicia on the display indicating an overlapping area within a second photograph that is to be taken" and involves "moving the overlaid indicia over the image displayed on the display as the camera is moved to a position to take the second photograph, which overlaid indicia is used to align and place the second photograph relative to the first photograph." The arguments made above with regard to Claim 1 support the allowability of Claim 11.

In view of the above, it is respectfully submitted that Claim 11 is not anticipated by, nor is it obvious in view of, the Anderson patent, and certainly not without distorting the express teachings of the Anderson patent and using improper hindsight reconstruction. Therefore, withdrawal of the Examiner's rejection of Claim 11 is respectfully requested.

Dependent Claims 12-15 are considered patentable over the Anderson patent at least based upon their dependence from allowable Claim 11. Withdrawal of the Examiner's rejection of Claims 12-15 and allowance thereof are respectfully requested.

With regard to independent Claim 19, it is respectfully submitted that the Anderson patent does not disclose or suggest, and not without distorting its express teachings and using improper hindsight reconstruction, a method that performs the sequence of steps recited in Claim 19.

In accordance with the teachings of the Anderson patent, and with reference to Fig. 7A, it is stated at column 7, lines 7-11 that

"Referring again to step 556 in FIG. 7A, in a preferred embodiment, the selection of various composite image formats is displayed using a menu of text and/or icons. After the selection of composite image formats is displayed, the user selects the desired composite image format in step 554." It is stated at column 7, lines 31-34 of the Anderson patent that "After the first image pane to be captured is indicated, the camera prompts the user to capture the first image in step 558. In response, the user aims the camera at a desired scene and captures the first image of the panorama in step 560."

Thus, it is clear that the Anderson patent teaches that the user defines the structure of the composite image and subsequently takes a photograph. Therefore, with regard to Claim 19, it is

respectfully submitted that the Anderson patent does not disclose or suggest "(1) taking a photograph," "(2) displaying the photograph on the display," and "(3) using a user interface to select that a composite photograph is to be taken" as is recited therein.

Furthermore, the Anderson patent teaches with reference to Fig. 7B and the description at column 8, lines 17-61 that

"If the current pane does overlap with a previously captured image, or if the user indicates that the previously captured image is to be overwritten in step 576, then the number (x) of previously captured images that overlap the current pane is determined in step 582. The LCD 402 of the camera is then divided into (x) zones and a live view zone in step 584.

Depending on how many captured panes the current pane overlaps with, the camera LCD 402 is divided into a total of least two zones, and at the most five zones. If the current pane overlaps with only one captured pane, the LCD 402 is divided into two zones, where one zone displays a portion of the previously captured image that overlaps the current image pane and other zone displays a live image of the scene as shown through the camera's imaging device. If the current pane overlaps with four captured panes (e.g., image position 5 in the 3x3 array of FIG. 8), the LCD 402 is divided into five zones, where four zones display the portions of the four previously captured images that overlap the current image pane, and the fifth zone displays a live image of the current image.

According to the present invention, the position of a displayed zone in the LCD 402 corresponds to the position of the previously captured overlapping image relative to the current pane. If a previously captured image is positioned above or below the current pane, then the zone for the previously captured image is positioned adjacent to the top, or to the bottom edge of the LCD 402, respectively. If a previously captured image is positioned to the left or to the right of the current pane, then the zone for the previously captured image is positioned adjacent to the left, or to right edge of the LCD 402, respectively.

After the LCD 402 is divided into x zones, the portions of the images that overlap with the current pane are displayed in their corresponding zones in step 586, while a live image of the next image in the scene is displayed in the live view zone in step 588."

Thus, from this, it is respectfully submitted that the Anderson patent teaches that the transparent displayed image (i.e., the previously captured pane) is not moved across the display in a direction that is opposite to the direction of the subsequent photograph until it overlaps a predetermined portion of the subsequent photograph that is to be taken.

Therefore, with regard to Claim 19, it is respectfully submitted that the Anderson patent does not disclose or suggest "(6) moving the transparent displayed image across the display in a direction that is opposite to the direction of the subsequent photograph until it overlaps a predetermined portion of the subsequent photograph that is to be taken, which overlap is used to align and place the subsequent photograph relative to the photograph." The Anderson patent teaches moving the live image relative to the still images displayed in the image panes.

Therefore, it is respectfully submitted that Claim 19 is not anticipated by, nor is it obvious in view of, the Anderson patent, and certainly not without distorting the express teachings of the Anderson patent and using improper hindsight reconstruction. Withdrawal of the Examiner's rejection of Claim 19 is respectfully requested.

Dependent Claim 20 is considered patentable over the Anderson patent at least based upon their dependence from allowable Claim 19. Withdrawal of the Examiner's rejection of Claim 20 and allowance thereof are respectfully requested.

With regard to independent Claim 21, it is respectfully submitted that the Anderson patent does not disclose or suggest, and not without distorting its express teachings and using improper hindsight reconstruction, a digital camera system comprising a processing algorithm that "after the first photograph has been taken, overlays indicia on the display indicating an overlapping area within a second photograph that is to be taken" and "moves the overlaid indicia over the image displayed on the display as the camera is moved to a position to take the second photograph, which overlaid indicia is used to align and place the second photograph relative to the first photograph" as is recited therein.

In view of the above, it is respectfully submitted that Claim 21 is not anticipated by, nor is it obvious in view of, the Anderson patent, and certainly not without distorting the express teachings of the Anderson patent and using improper hindsight reconstruction. Withdrawal of the Examiner's rejection of Claim 21 is respectfully requested.

Claims 6-8 and 16-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 6,657,667 issued to Anderson in view of US Patent No. 6,545,708 issued to Tamayama et al. The Examiner admitted that "Anderson does not expressly disclose that the indicia comprises a shadow copy of the first photograph." However, the Tamayama et al. patent was cited as teaching that "the indicia (figs. 5/7, refs. 100-104) comprises a shadow copy of the first photograph (ref. 101-102)."

It is respectfully submitted that the combined teachings of the Anderson and Tamayama et al. patents, taken singly or together, do not disclose or suggest the invention recited in Claims 1 and 11. Furthermore, there is no disclosure or suggestion contained in the Anderson patent that would indicate that it would be desirable to employ a shadow copy of the first photograph. This is apparently not necessary to the operation of the Anderson system, or else it would have been mentioned in the Anderson patent. Also, it is respectfully submitted that the Anderson and Tamayama et al. patents, taken singly or together, do not disclose or suggest that the indicia (shadow image) is moved over the live view image as is recited in Claims 1 and 11. As was argued above, the Anderson patent teaches moving the live image over the previously recorded still image(s).

It is respectfully submitted that there is no disclosure or teaching contained in any of the cited references that would suggest combining them to arrive at the invention recited in Claim 11. Such a combining of the teachings of the cited references is only arrived at using hindsight reconstruction, using the teachings of the cited references in light of the teachings contained in the present application. In order to be properly combined, the cited references must contain some indication that it would be desirable to combine them. This is clearly not the case.

Dependent Claims 6-8 and 16-18 are considered patentable over the combined teachings of the Anderson and Tamayama et al. patents, taken singly or together, at least based upon their dependence from allowable Claims 1 and 11. Withdrawal of the Examiner's rejection of Claims 6-8 and 16-18 and allowance thereof are respectfully requested.

Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 6,657,667 issued to Anderson in view of US Patent No. 6,304,284 issued to Dunton. The Examiner admitted that "Anderson does not expressly disclose the system wherein the algorithm guides the user to take photographs in a zigzag fashion." However, the Dunton patent was cited as teaching that "a system where an algorithm (fig. 1 B. ref. 166) guides the user to take photographs in a zigzag fashion (see fig. 1B and read col. 4, lines 12-34)."

It is respectfully submitted that the combined teachings of the Anderson and Dunton patents, taken singly or together, do not disclose or suggest the invention recited in Claim 1. Furthermore, there is no disclosure or suggestion contained in the Anderson patent that would indicate that it would be desirable to guide a user to take photographs in a zigzag fashion. The Anderson patent teaches that a number of image panes are displayed and that the user selects which pane to start with. The user then selects a subsequent pane depending upon the location of overlapping areas of the images.

Furthermore, Claim 10 is considered patentable over the combined teachings of the Anderson and Dunton patents, taken singly or together, at least based upon its dependence from allowable Claim 1. Withdrawal of the Examiner's rejection of Claim 10 and allowance thereof are respectfully requested.

The cited art made of record and not relied upon is considered pertinent to applicant's disclosure to the extent indicated by the Examiner.

In view of the above, it is respectfully submitted that all pending Claims are not anticipated by, nor are they obvious in view of, the cited patents, taken singly or together. Therefore, it is respectfully submitted that the pending Claims are allowable, and that the present application is in condition for allowance. Reconsideration and allowance of this application are earnestly solicited.

Respectfully submitted,



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Fig. 4a

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A USER TAKES A PHOTO

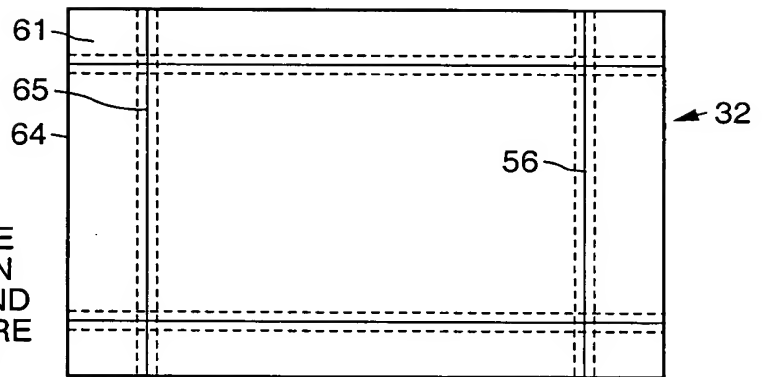
SOLID GUIDE LINES
ARE DISPLAYEDDOTTED LINES (NOT VISIBLE)
INDICATE REGIONS WHERE THE
ALGORITHM SEARCHES FOR AN
EDGE OR OBJECT TO TRACK, AND
TRIES TO IDENTIFY ONE OR MORE
ON EACH SIDE OF THE PHOTO

Fig. 4b

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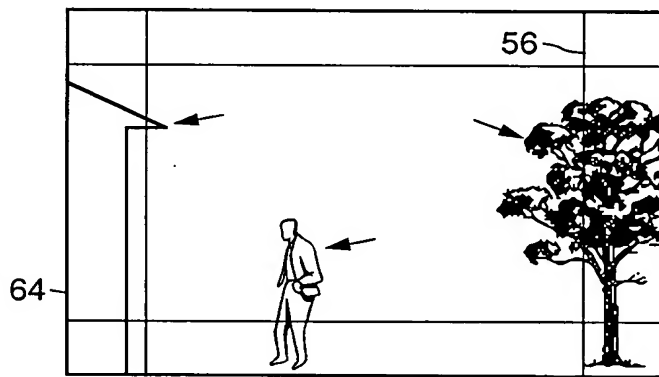
ARROWS (NOT VISIBLE
TO THE USER) INDICATE
POTENTIALLY USEFUL
EDGES FOR TRACKING

Fig. 4c

10 →

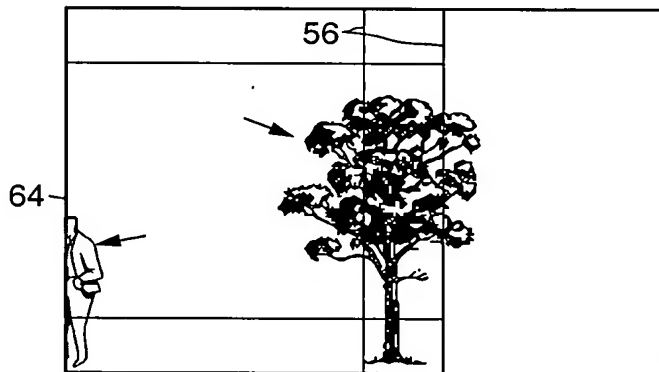
GUIDELINES ARE MOVED WITH
THE LIVE IMAGE AS THE USER
MOVES THE CAMERA TO SET
UP FOR THE NEXT PHOTOARROWS INDICATE THE
LOCATIONS THAT ARE
TRACKED BY THE ALGORITHM

Fig. 4d

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THE USER PLACES THE
OVERLAPPING REGION
CORRECTLY AT THE EDGE
BY PUTTING THE LINES
ALONG THE CORRECT SIDE